



#9

1

## SEQUENCE LISTING

<110> CROZE, EDWARD M.  
FAULDS, DARYL  
WAGNER, T. CHARIS

<120> NOVEL INTERFERON FOR THE TREATMENT OF MULTIPLE  
SCLEROSIS

<130> BERLX-88

<140> 09/881,050

<141> 2001-06-15

<150> 60/212,046

<151> 2000-06-16

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<170> PatentIn Ver. 2.1

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<211> 24

<212> DNA

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<220>

<223> Description of Artificial Sequence: Synthetic  
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<210> 2

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<223> Description of Artificial Sequence: Synthetic  
oligonucleotide

<400> 2

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24

<210> 3

<211> 27

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<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic  
oligonucleotide

<400> 3

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27

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<220>  
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<400> 4  
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<210> 5  
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<220>  
 <223> Description of Artificial Sequence: Synthetic  
 oligonucleotide

<400> 5  
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<210> 6  
 <211> 21  
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 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 oligonucleotide

<400> 6  
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<210> 7  
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<220>  
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 peptide

<400> 7  
 Lys His Phe Phe Gly Thr Val  
 1 5

<210> 8  
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<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<400> 8  
Ile Ile Phe Gln Gln Arg Gln Val  
1 5

<210> 9  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

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Lys Ser Leu Ser Pro  
1 5

<210> 10  
<211> 5  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<400> 10  
Phe Arg Ala Asn Ile  
1 5

<210> 11  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<400> 11  
Ala Glu Lys Leu Ser Gly Thr  
1 5

<210> 12  
<211> 7  
<212> PRT  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 12

Cys Leu Phe Phe Val Phe Ser  
1 5

<210> 13

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic peptide

<400> 13

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1 5 10 15

Arg Ser Pro Arg  
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<210> 14

<211> 21

<212> PRT

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Synthetic peptide

<400> 14

Lys Leu Ser Lys Gln Gly Arg Pro Leu Asn Asp Met Lys Gln Glu Leu  
1 5 10 15

Thr Thr Glu Phe Arg  
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<210> 15

<211> 1201

<212> DNA

<213> Homo sapiens

<400> 15

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acacaatagg gaaatggaga aaatgtactc tgaacacccat gaaaaggga cctgaaaatc 240  
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caaaataatc tgagatgcat gaaaggcaaa cattcactag agctggaatt tccctaagtc 360  
tatgcaggga taagtagcat atttgacctt caccatgatt atcaagcact tctttggaac 420  
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<210> 16
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<213> Homo sapiens

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Thr Thr Ile Phe Ser Leu Asp Leu Lys Leu Ile Ile Phe Gln Gln Arg
  20              25              30

Gln Val Asn Gln Glu Ser Leu Lys Leu Leu Asn Lys Leu Gln Thr Leu
  35              40              45

Ser Ile Gln Gln Cys Leu Pro His Arg Lys Asn Phe Leu Leu Pro Gln
  50              55              60

Lys Ser Leu Ser Pro Gln Gln Tyr Gln Lys Gly His Thr Leu Ala Ile
  65              70              75              80

Leu His Glu Met Leu Gln Gln Ile Phe Ser Leu Phe Arg Ala Asn Ile
  85              90              95

Ser Leu Asp Gly Trp Glu Glu Asn His Thr Glu Lys Phe Leu Ile Gln
 100              105              110

Leu His Gln Gln Leu Glu Tyr Leu Glu Ala Leu Met Gly Leu Glu Ala
 115              120              125

Glu Lys Leu Ser Gly Thr Leu Gly Ser Asp Asn Leu Arg Leu Gln Val
 130              135              140

Lys Met Tyr Phe Arg Arg Ile His Asp Tyr Leu Glu Asn Gln Asp Tyr
 145              150              155              160

Ser Thr Cys Ala Trp Ala Ile Val Gln Val Glu Ile Ser Arg Cys Leu
 165              170              175

Phe Phe Val Phe Ser Leu Thr Glu Lys Leu Ser Lys Gln Gly Arg Pro
 180              185              190

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Leu Asn Asp Met Lys Gln Glu Leu Thr Thr Glu Phe Arg Ser Pro Arg  
 195 200 205

<210> 17

<211> 187

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: IFNB amino  
 acid sequence

<400> 17

Met Thr Asn Lys Cys Leu Leu Gln Ile Ala Leu Leu Leu Cys Phe Ser  
 1 5 10 15

Thr Thr Ala Leu Ser Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg  
 20 25 30

Ser Ser Asn Phe Gln Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg  
 35 40 45

Leu Glu Tyr Cys Leu Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu  
 50 55 60

Ile Lys Gln Leu Gln Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile  
 65 70 75 80

Tyr Glu Met Leu Gln Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser  
 85 90 95

Ser Thr Gly Trp Asn Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val  
 100 105 110

Tyr His Gln Ile Asn His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu  
 115 120 125

Lys Glu Asp Phe Thr Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys  
 130 135 140

Arg Tyr Tyr Gly Arg Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser  
 145 150 155 160

His Cys Ala Trp Thr Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr  
 165 170 175

Phe Ile Asn Arg Leu Thr Gly Tyr Leu Arg Asn  
 180 185

<210> 18

<211> 189

<212> PRT

<213> Unknown Organism

&lt;220&gt;

&lt;223&gt; Description of Unknown Organism: IFNalpha8 amino acid sequence

&lt;400&gt; 18

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Met Ala Leu Thr Phe Tyr Leu Leu Val Ala Leu Val Val Leu Ser Tyr
 1              5              10              15

Lys Ser Phe Ser Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu
              20              25              30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Arg Arg Ile Ser
              35              40              45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Glu Phe Pro Gln Glu
 50              55              60

Glu Phe Asp Asp Lys Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu
 65              70              75              80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser
              85              90              95

Ser Ala Ala Leu Asp Glu Thr Leu Leu Asp Glu Phe Tyr Ile Glu Leu
              100              105              110

Asp Gln Gln Leu Asn Asp Leu Glu Ser Cys Val Met Gln Glu Val Gly
              115              120              125

Val Ile Glu Ser Pro Leu Met Tyr Glu Asp Ser Ile Leu Ala Val Arg
              130              135              140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser
              145              150              155              160

Ser Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser
              165              170              175

Leu Ser Ile Asn Leu Gln Lys Arg Leu Lys Ser Lys Glu
              180              185

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&lt;210&gt; 19

&lt;211&gt; 189

&lt;212&gt; PRT

&lt;213&gt; Unknown Organism

&lt;220&gt;

&lt;223&gt; Description of Unknown Organism: IFNalpha7 amino acid sequence

&lt;400&gt; 19

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Met Ala Arg Ser Phe Ser Leu Leu Met Val Val Leu Val Leu Ser Tyr
 1              5              10              15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu
              20              25              30

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Arg Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
                   35                                  40                                  45  
 Pro Phe Ser Cys Leu Lys Asp Arg His Glu Phe Arg Phe Pro Glu Glu  
                   50                                  55                                  60  
 Glu Phe Asp Gly His Gln Phe Gln Lys Thr Gln Ala Ile Ser Val Leu  
                   65                                  70                                  75                                  80  
 His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Glu Asp Ser  
                                   85                                  90                                  95  
 Ser Ala Ala Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
                                   100                                  105                                  110  
 Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Glu Val Gly  
                   115                                  120                                  125  
 Val Glu Glu Thr Pro Leu Met Asn Glu Asp Phe Ile Leu Ala Val Arg  
                   130                                  135                                  140  
 Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Met Glu Lys Lys Tyr Ser  
                   145                                  150                                  155                                  160  
 Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
                                   165                                  170                                  175  
 Phe Ser Thr Asn Leu Lys Lys Gly Leu Arg Arg Lys Asp  
                   180                                  185

<210> 20

<211> 189

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: IFNalpha6 amino acid sequence

<400> 20

Met Ala Leu Pro Phe Ala Leu Leu Met Ala Leu Val Val Leu Ser Cys  
                   1                                  5                                  10                                  15  
 Lys Ser Ser Cys Ser Leu Asp Cys Asp Leu Pro Gln Thr His Ser Leu  
                                   20                                  25                                  30  
 Gly His Arg Arg Thr Met Met Leu Leu Ala Gln Met Arg Arg Ile Ser  
                   35                                  40                                  45  
 Leu Phe Ser Cys Leu Lys Asp Arg His Asp Phe Arg Phe Pro Gln Glu  
                   50                                  55                                  60  
 Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Glu Ala Ile Ser Val Leu  
                   65                                  70                                  75                                  80  
 His Glu Val Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
                                   85                                  90                                  95



Ser Val Ala Trp Asp Glu Arg Leu Leu Asp Lys Leu Tyr Thr Glu Leu  
100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Met Gln Glu Val Trp  
115 120 125

Val Gly Gly Thr Pro Leu Met Asn Glu Asp Ser Ile Leu Ala Val Arg  
130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
165 170 175

Ser Ser Arg Asn Leu Gln Glu Arg Leu Arg Arg Lys Glu  
180 185

<210> 21

<211> 189

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: IFNalpha5 amino  
acid sequence

<400> 21

Met Ala Leu Pro Phe Val Leu Leu Met Ala Leu Val Val Leu Asn Cys  
1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
20 25 30

Ser Asn Arg Arg Thr Leu Met Ile Met Ala Gln Met Gly Arg Ile Ser  
35 40 45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
50 55 60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
85 90 95

Ser Ala Thr Trp Asp Glu Thr Leu Leu Asp Lys Phe Tyr Thr Glu Leu  
100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Met Met Gln Glu Val Gly  
115 120 125

Val Glu Asp Thr Pro Leu Met Asn Val Asp Ser Ile Leu Thr Val Arg  
130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
 145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
 165 170 175

Leu Ser Ala Asn Leu Gln Glu Arg Leu Arg Arg Lys Glu  
 180 185

<210> 22

<211> 189

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: IFNalpha4b amino  
 acid sequence

<400> 22

Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
 1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
 20 25 30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
 35 40 45

His Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Glu Glu  
 50 55 60

Glu Phe Asp Gly His Gln Phe Gln Lys Thr Gln Ala Ile Ser Val Leu  
 65 70 75 80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Glu Asp Ser  
 85 90 95

Ser Ala Ala Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
 100 105 110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Glu Val Gly  
 115 120 125

Val Glu Glu Thr Pro Leu Met Asn Val Asp Ser Ile Leu Ala Val Arg  
 130 135 140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
 145 150 155 160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser  
 165 170 175

Phe Ser Thr Asn Leu Gln Lys Arg Leu Arg Arg Lys Asp  
 180 185

<210> 23  
 <211> 189  
 <212> PRT  
 <213> Unknown Organism

<220>  
 <223> Description of Unknown Organism: IFNalpha21 amino  
 acid sequence

<400> 23  
 Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
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 Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
           20                  25                  30  
 Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
           35                  40                  45  
 Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
   50                  55                  60  
 Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
   65                  70                  75                  80  
 His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
           85                  90                  95  
 Ser Ala Thr Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
           100                  105                  110  
 Asn Gln Gln Leu Asn Asp Met Glu Ala Cys Val Ile Gln Glu Val Gly  
           115                  120                  125  
 Val Glu Glu Thr Pro Leu Met Asn Val Asp Ser Ile Leu Ala Val Lys  
   130                  135                  140  
 Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser  
   145                  150                  155                  160  
 Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
           165                  170                  175  
 Leu Ser Lys Ile Phe Gln Glu Arg Leu Arg Arg Lys Glu  
           180                  185

<210> 24  
 <211> 188  
 <212> PRT  
 <213> Unknown Organism

<220>  
 <223> Description of Unknown Organism: IFNalpha2 amino  
 acid sequence

&lt;400&gt; 24

Met Ala Leu Thr Phe Ala Leu Leu Val Ala Leu Leu Val Leu Ser Cys  
 1 5 10 15

Lys Ser Ser Cys Ser Val Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
 20 25 30

Gly Ser Arg Arg Thr Leu Met Leu Leu Ala Gln Met Arg Arg Ile Ser  
 35 40 45

Leu Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
 50 55 60

Glu Phe Gly Asn Gln Phe Gln Lys Ala Glu Thr Ile Pro Val Leu His  
 65 70 75 80

Glu Met Ile Gln Gln Ile Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser  
 85 90 95

Ala Ala Trp Asp Glu Thr Leu Leu Asp Lys Phe Tyr Thr Glu Leu Tyr  
 100 105 110

Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Gly Val Gly Val  
 115 120 125

Thr Glu Thr Pro Leu Met Lys Glu Asp Ser Ile Leu Ala Val Arg Lys  
 130 135 140

Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Lys Glu Lys Lys Tyr Ser Pro  
 145 150 155 160

Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser Leu  
 165 170 175

Ser Thr Asn Leu Gln Glu Ser Leu Arg Ser Lys Glu  
 180 185

&lt;210&gt; 25

&lt;211&gt; 189

&lt;212&gt; PRT

&lt;213&gt; Unknown Organism

&lt;220&gt;

<223> Description of Unknown Organism: IFNalpha16 amino  
 acid sequence

&lt;400&gt; 25

Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
 1 5 10 15

Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
 20 25 30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Ala Gln Met Gly Arg Ile Ser  
 35 40 45

His Phe Ser Cys Leu Lys Asp Arg Tyr Asp Phe Gly Phe Pro Gln Glu  
 50 55 60  
 Val Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Ala Phe  
 65 70 75 80  
 His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asp Ser  
 85 90 95  
 Ser Ala Ala Trp Asp Glu Thr Leu Leu Asp Lys Phe Tyr Ile Glu Leu  
 100 105 110  
 Phe Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Thr Gln Glu Val Gly  
 115 120 125  
 Val Glu Glu Ile Ala Leu Met Asn Glu Asp Ser Ile Leu Ala Val Arg  
 130 135 140  
 Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Met Gly Lys Lys Tyr Ser  
 145 150 155 160  
 Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser  
 165 170 175  
 Phe Ser Thr Asn Leu Gln Lys Gly Leu Arg Arg Lys Asp  
 180 185

<210> 26

<211> 189

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: IFNalpha14 amino acid sequence

<400> 26

Met Ala Leu Pro Phe Ala Leu Met Met Ala Leu Val Val Leu Ser Cys  
 1 5 10 15  
 Lys Ser Ser Cys Ser Leu Gly Cys Asn Leu Ser Gln Thr His Ser Leu  
 20 25 30  
 Asn Asn Arg Arg Thr Leu Met Leu Met Ala Gln Met Arg Arg Ile Ser  
 35 40 45  
 Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Glu Phe Pro Gln Glu  
 50 55 60  
 Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
 65 70 75 80  
 His Glu Met Met Gln Gln Thr Phe Asn Leu Phe Ser Thr Lys Asn Ser  
 85 90 95  
 Ser Ala Ala Trp Asp Glu Thr Leu Leu Glu Lys Phe Tyr Ile Glu Leu  
 100 105 110

Phe	Gln	Gln	Met	Asn	Asp	Leu	Glu	Ala	Cys	Val	Ile	Gln	Glu	Val	Gly
		115					120					125			
Val	Glu	Glu	Thr	Pro	Leu	Met	Asn	Glu	Asp	Ser	Ile	Leu	Ala	Val	Lys
	130					135					140				
Lys	Tyr	Phe	Gln	Arg	Ile	Thr	Leu	Tyr	Leu	Met	Glu	Lys	Lys	Tyr	Ser
145					150					155					160
Pro'	Cys	Ala	Trp	Glu	Val	Val	Arg	Ala	Glu	Ile	Met	Arg	Ser	Phe	Ser
				165					170					175	
Phe	Ser	Thr	Asn	Leu	Gln	Lys	Arg	Leu	Arg	Arg	Lys	Asp			
			180					185							

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<210> 27
<211> 189
<212> PRT
<213> Unknown Organism
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<220>
<223> Description of Unknown Organism: IFNalpha13 amino
      acid sequence
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<400> 27
Met Ala Ser Pro Phe Ala Leu Leu Met Val Leu Val Val Leu Ser Cys
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Lys Ser Ser Cys Ser Leu Gly Cys Asp Leu Pro Glu Thr His Ser Leu
      20      25                      30

Asp Asn Arg Arg Thr Leu Met Leu Leu Ala Gln Met Ser Arg Ile Ser
      35                      40                      45

Pro Ser Ser Cys Leu Met Asp Arg His Asp Phe Gly Phe Pro Gln Glu
      50                      55                      60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Pro Ala Ile Ser Val Leu
      65                      70                      75                      80

His Glu Leu Ile Gln Gln Ile Phe Asn Leu Phe Thr Thr Lys Asp Ser
      85                      90                      95

Ser Ala Ala Trp Asp Glu Asp Leu Leu Asp Lys Phe Cys Thr Glu Leu
      100                      105                      110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Met Gln Glu Glu Arg
      115                      120                      125

Val Gly Glu Thr Pro Leu Met Asn Ala Asp Ser Ile Leu Ala Val Lys
      130                      135                      140

Lys Tyr Phe Arg Arg Ile Thr Leu Tyr Leu Thr Glu Lys Lys Tyr Ser
      145                      150                      155                      160

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Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser  
                   165                  170                  175

Leu Ser Thr Asn Leu Gln Glu Arg Leu Arg Arg Lys Glu  
                   180                  185

<210> 28

<211> 189

<212> PRT

<213> Unknown Organism

<220>

<223> Description of Unknown Organism: IFNalpha10 amino  
           acid sequence

<400> 28

Met Ala Leu Ser Phe Ser Leu Leu Met Ala Val Leu Val Leu Ser Tyr  
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Lys Ser Ile Cys Ser Leu Gly Cys Asp Leu Pro Gln Thr His Ser Leu  
                   20                  25                  30

Gly Asn Arg Arg Ala Leu Ile Leu Leu Gly Gln Met Gly Arg Ile Ser  
                   35                  40                  45

Pro Phe Ser Cys Leu Lys Asp Arg His Asp Phe Arg Ile Pro Gln Glu  
                   50                  55                  60

Glu Phe Asp Gly Asn Gln Phe Gln Lys Ala Gln Ala Ile Ser Val Leu  
   65                  70                  75                  80

His Glu Met Ile Gln Gln Thr Phe Asn Leu Phe Ser Thr Glu Asp Ser  
                   85                  90                  95

Ser Ala Ala Trp Glu Gln Ser Leu Leu Glu Lys Phe Ser Thr Glu Leu  
                   100                  105                  110

Tyr Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Glu Val Gly  
                   115                  120                  125

Val Glu Glu Thr Pro Leu Met Asn Glu Asp Ser Ile Leu Ala Val Arg  
                   130                  135                  140

Lys Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Ile Glu Arg Lys Tyr Ser  
   145                  150                  155                  160

Pro Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Leu Ser  
                   165                  170                  175

Phe Ser Thr Asn Leu Gln Lys Arg Leu Arg Arg Lys Asp  
                   180                  185

<210> 29

<211> 195

<212> PRT

<213> Unknown Organism

&lt;220&gt;

&lt;223&gt; Description of Unknown Organism: IFNomegal amino acid sequence

&lt;400&gt; 29

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Met Ala Leu Leu Phe Pro Leu Leu Ala Ala Leu Val Met Thr Ser Tyr
 1              5              10              15

Ser Pro Val Gly Ser Leu Gly Cys Asp Leu Pro Gln Asn His Gly Leu
      20              25              30

Leu Ser Arg Asn Thr Leu Val Leu Leu His Gln Met Arg Arg Ile Ser
      35              40              45

Pro Phe Leu Cys Leu Lys Asp Arg Arg Asp Phe Arg Phe Pro Gln Glu
      50              55              60

Met Val Lys Gly Ser Gln Leu Gln Lys Ala His Val Met Ser Val Leu
      65              70              75              80

His Glu Met Leu Gln Gln Ile Phe Ser Leu Phe His Thr Glu Arg Ser
      85              90              95

Ser Ala Ala Trp Asn Met Thr Leu Leu Asp Gln Leu His Thr Gly Leu
      100             105             110

His Gln Gln Leu Gln His Leu Glu Thr Cys Leu Leu Gln Val Val Gly
      115             120             125

Glu Gly Glu Ser Ala Gly Ala Ile Ser Ser Pro Ala Leu Thr Leu Arg
      130             135             140

Arg Tyr Phe Gln Gly Ile Arg Val Tyr Leu Lys Glu Lys Lys Tyr Ser
      145             150             155             160

Asp Cys Ala Trp Glu Val Val Arg Met Glu Ile Met Lys Ser Leu Phe
      165             170             175

Leu Ser Thr Asn Met Gln Glu Arg Leu Arg Ser Lys Asp Arg Asp Leu
      180             185             190

Gly Ser Ser
      195

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&lt;210&gt; 30

&lt;211&gt; 166

&lt;212&gt; PRT

&lt;213&gt; Unknown Organism

&lt;220&gt;

&lt;223&gt; Description of Unknown Organism: IFNgamma amino acid sequence

&lt;400&gt; 30

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Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu
 1              5              10              15

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[illegible]